

KDE District Facilities Branch 2014 Update

High Performance Sustainable Schools Workshop

Greg Dunbar

Branch Manager

March 13, 2014



Agenda

- ▶ Efficient School Design (KRS 157.450 and 157.455)
- ▶ 2014 KY Green Ribbon Schools
- ▶ School Safety and Security
- ▶ Legislation Updates



Encouraging Efficient School Design



Efficient School Design (KRS 157.450 & 157.455)

- ▶ It is the intent of KRS 157.450 and 157.455 to:
 - (1) Support the construction of new school buildings and the renovation of existing school buildings in a manner that will create a healthy environment for students and teachers while saving energy, resources, and operational expenses; and
 - (2) Encourage the use of a life-cycle cost, holistic approach to building design that considers school design, construction, operation, and maintenance in the initial decision-making process.

Effective: July 15, 2010



Efficient School Design (KRS 157.450 & 157.455)

- ▶ "Efficient school design" means a school building design:
 - 1. That meets, at a minimum, the requirements of the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) for schools at the "Certified" level or certification under a comparable system with equivalent requirements or other building performance certification systems, such as the United States Department of Energy's Energy Star program;
 - 2. That ensures energy savings from a building design that equates to or exceeds ten percent (10%) over the American Society of Heating, Refrigerating, and Air Conditioning Engineers energy standard 90.1 – 2007; and
 - 3. For which whole building life-cycle cost analysis illustrates that the design is cost-effective.



Efficient School Design (KRS 157.450 & 157.455)

KRS 157.455 (7)

- ▶ The Department of Education and the Department for Energy Development and Independence shall, by November 1, 2010, and each year thereafter, for the fiscal year ending on June 30 of that year, prepare a report that shall be submitted to the Legislative Research Commission and the Governor.
- ▶ The report shall address new school buildings or building renovations and shall include but not be limited to the following:
 - ▶ (a) An assessment of the implementation of efficient school design within Kentucky's education system;
 - ▶ (b) Documented energy savings from any buildings built using efficient school design or net zero school buildings in operation;



Efficient School Design (KRS 157.450 & 157.455)

KRS 157.455 (7) Continued

- ▶ (c) A list of the new or renovated school buildings completed or identified for future construction during the prior year using efficient school design, including the name of the school district, name of the school, total project cost, additional cost or savings, if any, associated with efficient school design features, and efficient school design features included in the project;
- ▶ (d) A list of all school buildings that operate as a net zero building, and school buildings which school districts plan to convert to net zero. The list shall include the name of the school district, the name of the school, the total cost associated with the school building becoming a net zero building, and the components that will be installed to make the building a net zero building;
- ▶ (e) Any recommendations relating to efficient school design; and
- ▶ (f) A list of new school buildings completed during the prior year without using efficient school design and an explanation of why efficient school design was not used.



Efficient School Design (KRS 157.450 & 157.455)

Snapshot BG-2 Form Energy Section

KENTUCKY DEPARTMENT OF EDUCATION
702 KAR 4:160

BG-2
OUTLINE SPECIFICATIONS ENERGY-DESIGN CRITERIA

ENERGY EFFICIENT DESIGN (KRS 157.450 and KRS 157.455):

_____ Energy Consumption "Existing" (kBtu/sf/yr)

_____ Energy Consumption Target (kBtu/sf/yr)

YES NO

☐ ☐ LEED Certified Other: _____

☐ ☐ Designed to meet Energy Star _____

☐ ☐ Exceeds ASHRAE 90.1(2007) by 10% (Minimum) _____

☐ ☐ Whole Building Life Cycle Cost Analysis Demonstrating Cost Effective Design _____

Life Cycle Cost Analysis Software Used: _____

If not yes to one or more of the above, explain why. _____

☐ ☐ Designed to be Net-Zero _____

☐ ☐ Designed to be Net-Zero Ready _____

Energy Efficient Design Features: (See List Page 4, or Use Drop Down List)

East / West Building Orientation ☐ YES ☐ NO

Gross Exterior Wall Area (sf): _____

Gross Window / Door Area (sf): _____

Gross Roof Area (sf): _____

Exterior Wall Type: _____

Avg. Exterior Wall R-Value: _____

Avg. Window/Door R-Value: _____

Avg. Roof R-Value: _____

Other: _____



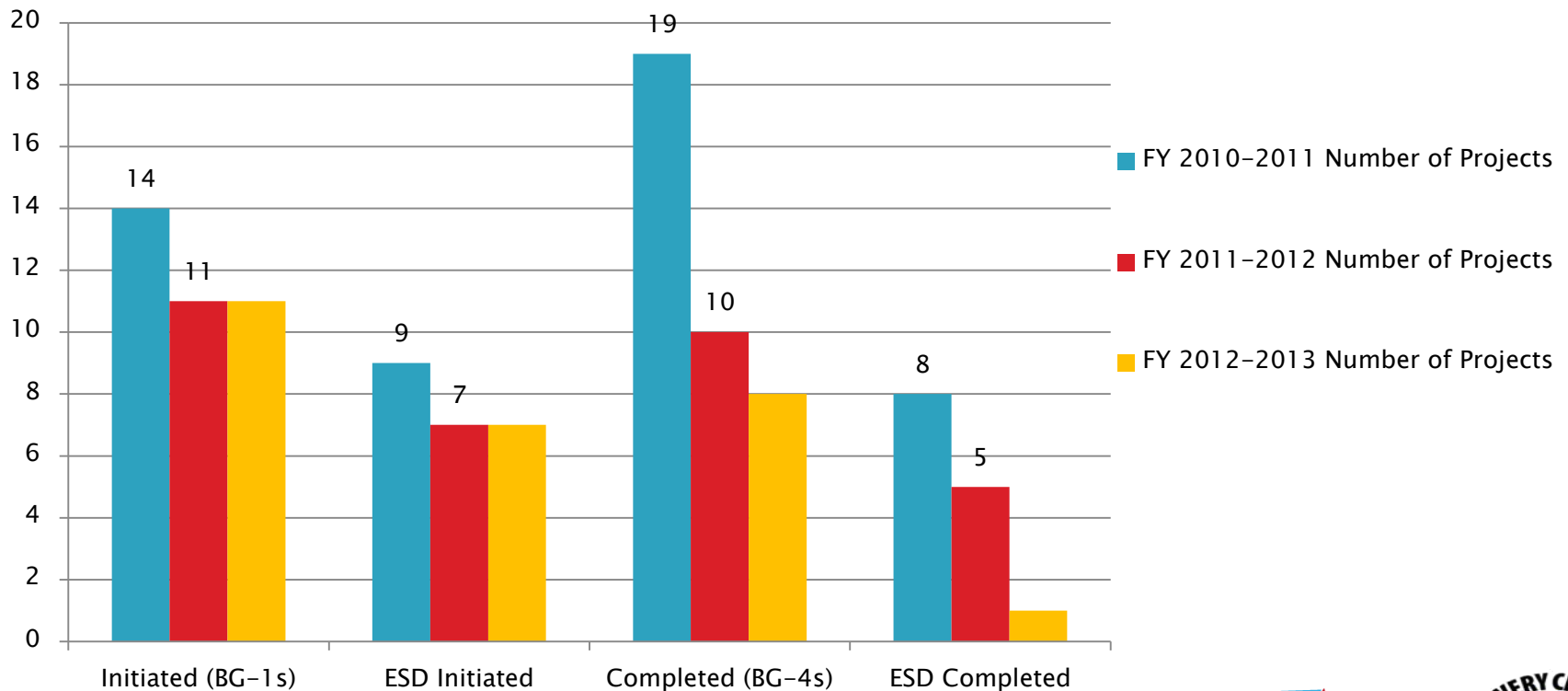
Efficient School Design (KRS 157.450 & 157.455)

All Projects FY 2010-2011	Initiated (BG1s)	Completed (BG4s)
Number of Projects	314	94
Total Project Construction Cost	\$503,339,940	\$402,205,726
All Projects FY 2011-2012	Initiated (BG1s)	Completed (BG4s)
Number of Projects	263	180
Total Project Construction Cost	\$354,137,888	\$262,788,716
All Projects FY 2012-2013	Initiated (BG1s)	Completed (BG4s)
Number of Projects	254	244
Total Project Construction Cost	\$314,770,794	\$324,062,765



Efficient School Design (KRS 157.450 & 157.455)

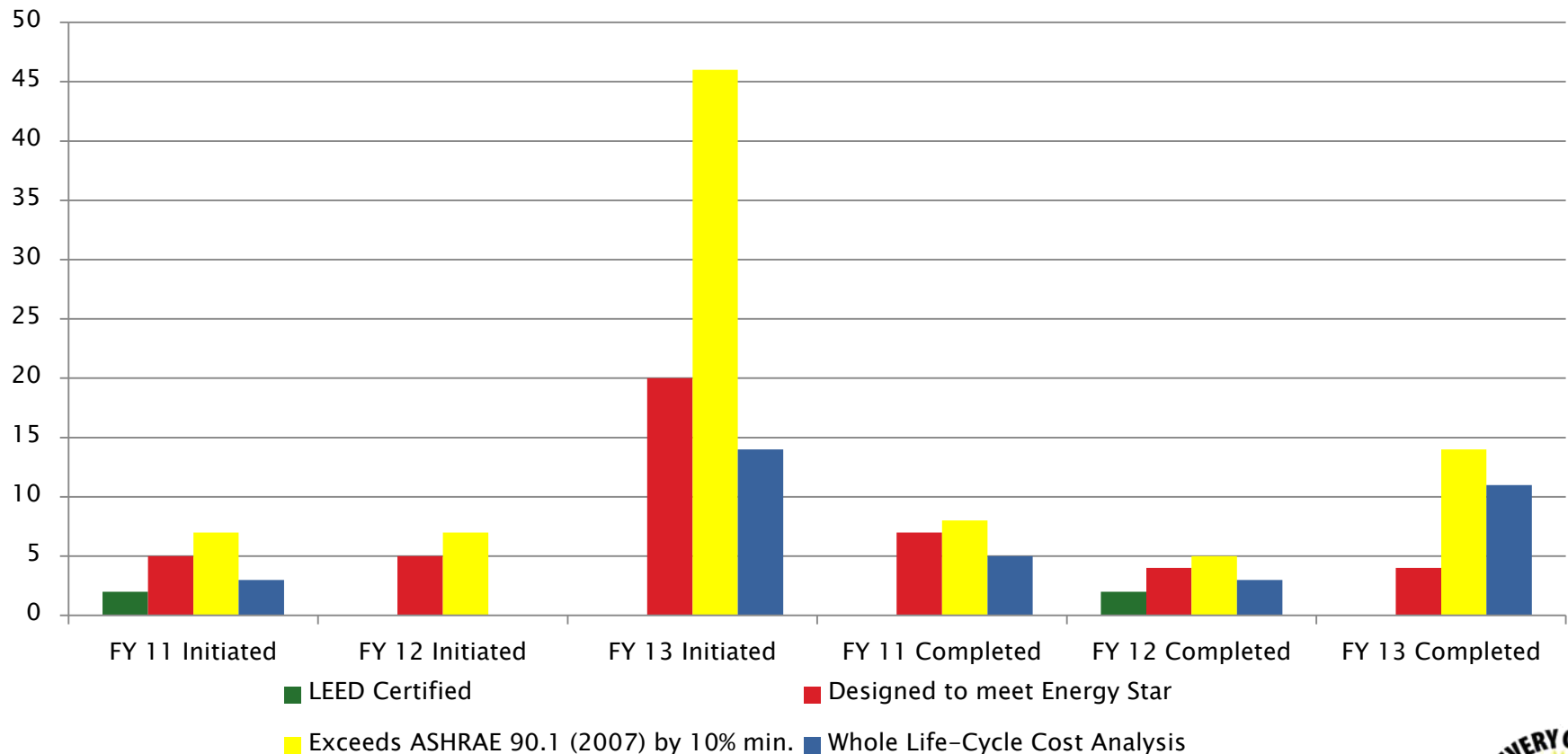
New Construction Projects



Efficient School Design (KRS 157.450 & 157.455)

Number of Projects by Efficient School Design Criteria

(A Project may meet one or more efficient school design criteria types)



Data based upon Annual Energy Reports



Efficient School Design (KRS 157.450 & 157.455)

Number of ENERGY STAR Labeled K-12 Schools in Kentucky

- ▶ Building Construction Ranging from 1903 to 2012
Over 20,350,000 ft² Floor Space
- ▶ 248 as of February 27, 2014
18% of approximately 1,400 schools

Source: <http://www.energystar.gov>



Efficient School Design (KRS 157.450 & 157.455)

2003 – 2013 New School Buildings Report

2014 High Performance Sustainable Schools Workshop Theme
“Affordable and Attainable”

Comparison of each model: elementary, middle and high to the KDE Model Program of Spaces

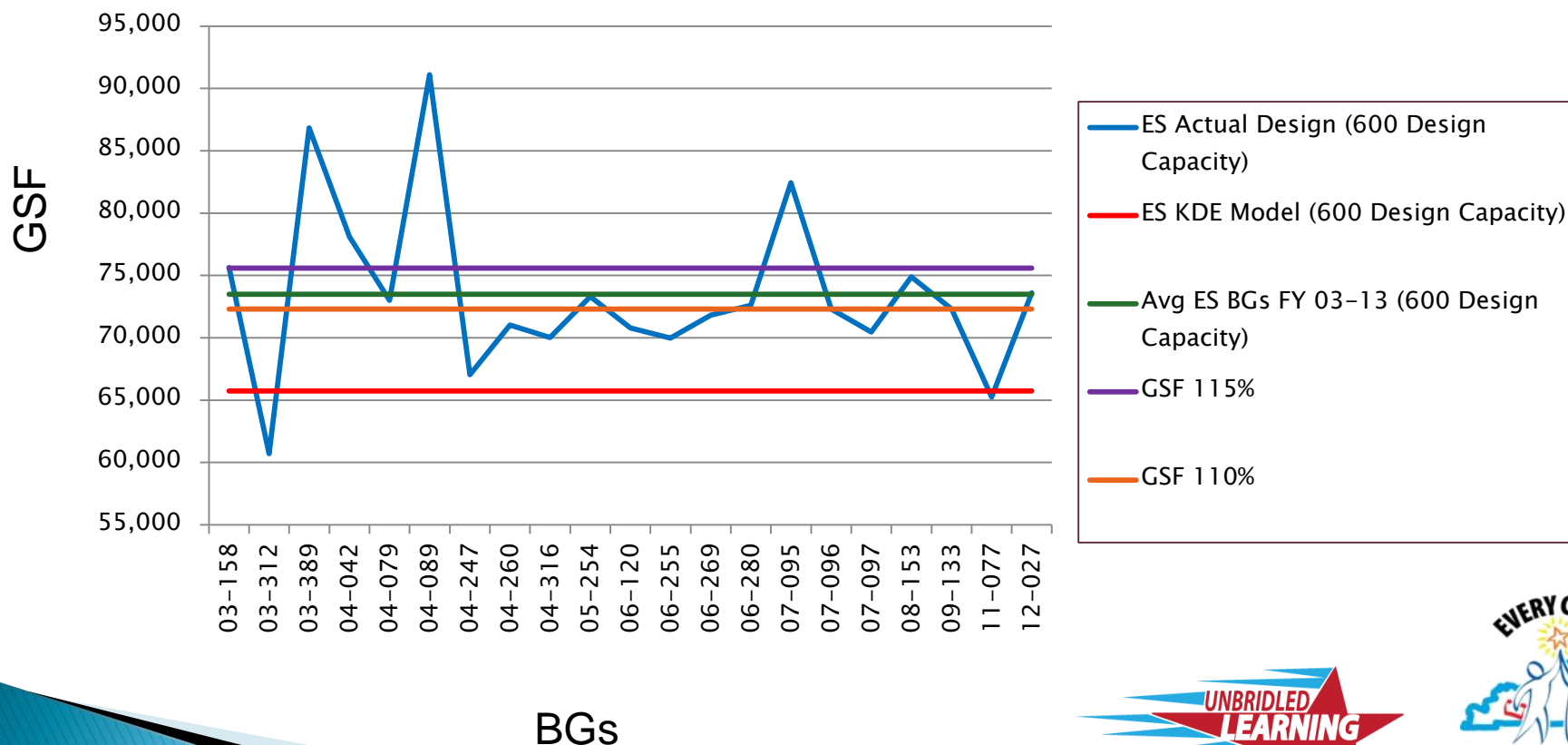
- ▶ Actual Design Program Area GSF vs KDE Model Program Area GSF
 - 702 KAR 4:160 – Section 6 (1) (c) 4.c. Maximum gross areas in compliance with 702 KAR 4:170 and 702 KAR 4:180, with:
 - i) An elementary school limited to 115 percent of the total gross area of the model program of spaces; or
 - (ii) A middle or high school limited to 120 percent of the total gross area of the model program of spaces; and



Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF
New School Buildings 2003 – 2013

ELEMENTARY 600 Design Capacity



Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF

New School Buildings 2003 – 2013

ELEMENTARY 600 Design Capacity

Design Type	ES Actual Design (600 Design Capacity)	ES KDE Model (600 Design Capacity)	Avg ES BGs FY 03-13 (600 Design Capacity)	GSF 115%	GSF 110%
03-158	75,638	65,736	73,487	75,596	72,310
03-312	60,720	65,736	73,487	75,596	72,310
03-389	86,832	65,736	73,487	75,596	72,310
04-042	78,105	65,736	73,487	75,596	72,310
04-079	72,998	65,736	73,487	75,596	72,310
04-089	91,095	65,736	73,487	75,596	72,310
04-247	67,035	65,736	73,487	75,596	72,310
04-260	71,038	65,736	73,487	75,596	72,310
04-316	70,015	65,736	73,487	75,596	72,310
05-254	73,300	65,736	73,487	75,596	72,310
06-120	70,783	65,736	73,487	75,596	72,310
06-255	69,977	65,736	73,487	75,596	72,310
06-269	71,818	65,736	73,487	75,596	72,310
06-280	72,617	65,736	73,487	75,596	72,310
07-095	82,433	65,736	73,487	75,596	72,310
07-096	72,300	65,736	73,487	75,596	72,310
07-097	70,480	65,736	73,487	75,596	72,310
08-153	74,882	65,736	73,487	75,596	72,310
09-133	72,300	65,736	73,487	75,596	72,310
11-077	65,247	65,736	73,487	75,596	72,310
12-027	73,610	65,736	73,487	75,596	72,310

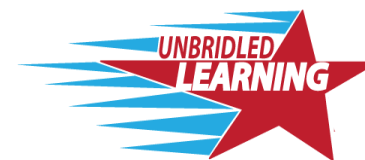
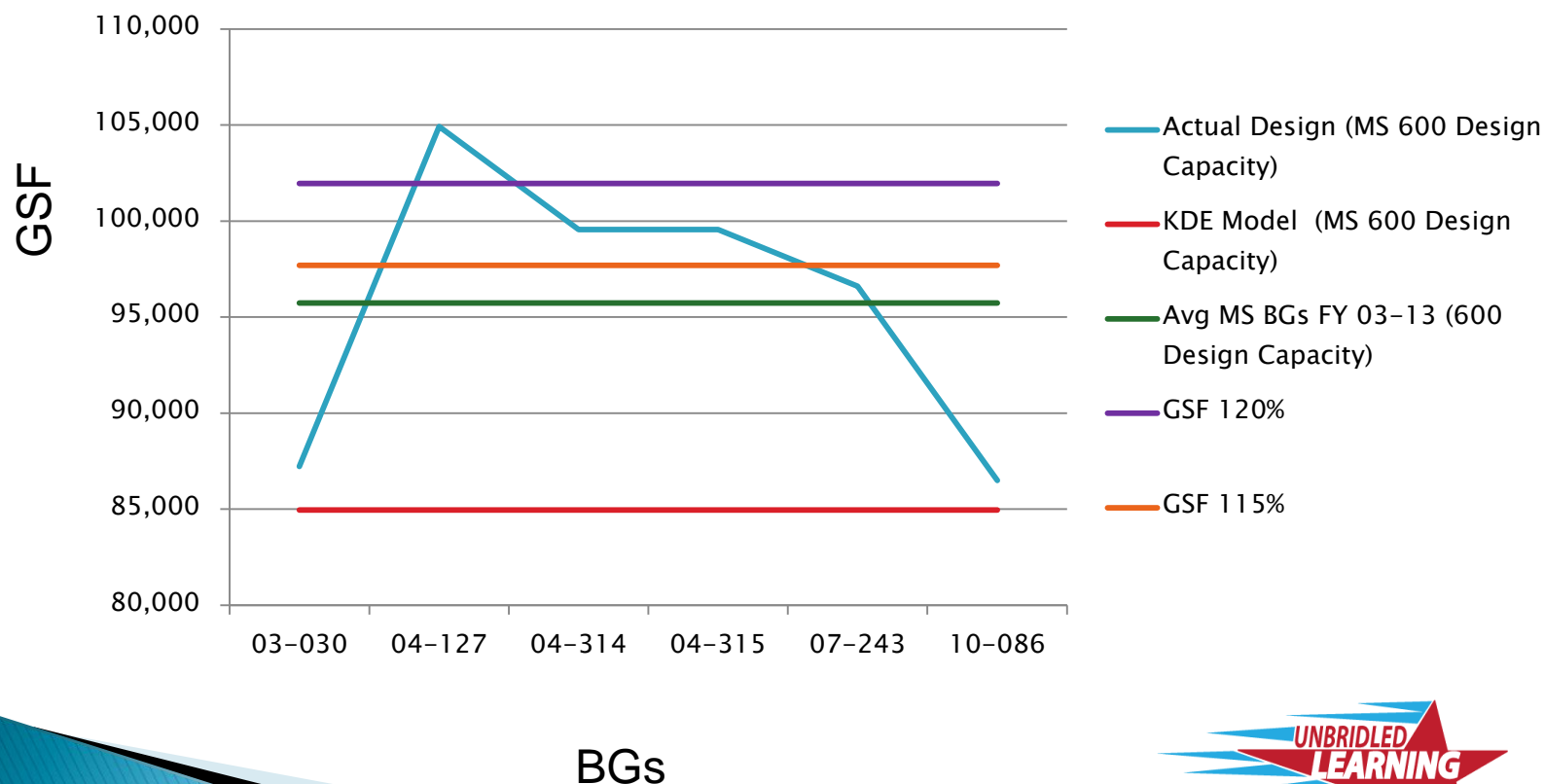


Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF

New School Buildings 2003 – 2013

MIDDLE SCHOOL 600 Design Capacity



Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF

New School Buildings 2003 – 2013

MIDDLE SCHOOL 600 Design Capacity

BG	Actual Design (MS 600 Design Capacity)	KDE Model (MS 600 Design Capacity)	Avg MS BGs FY 03– 13 (600 Design Capacity)	GSF 120%	GSF 115%
03-030	87,225	84,958	95,727	101,950	97,702
04-127	104,926	84,958	95,727	101,950	97,702
04-314	99,554	84,958	95,727	101,950	97,702
04-315	99,554	84,958	95,727	101,950	97,702
07-243	96,604	84,958	95,727	101,950	97,702
10-086	86,497	84,958	95,727	101,950	97,702

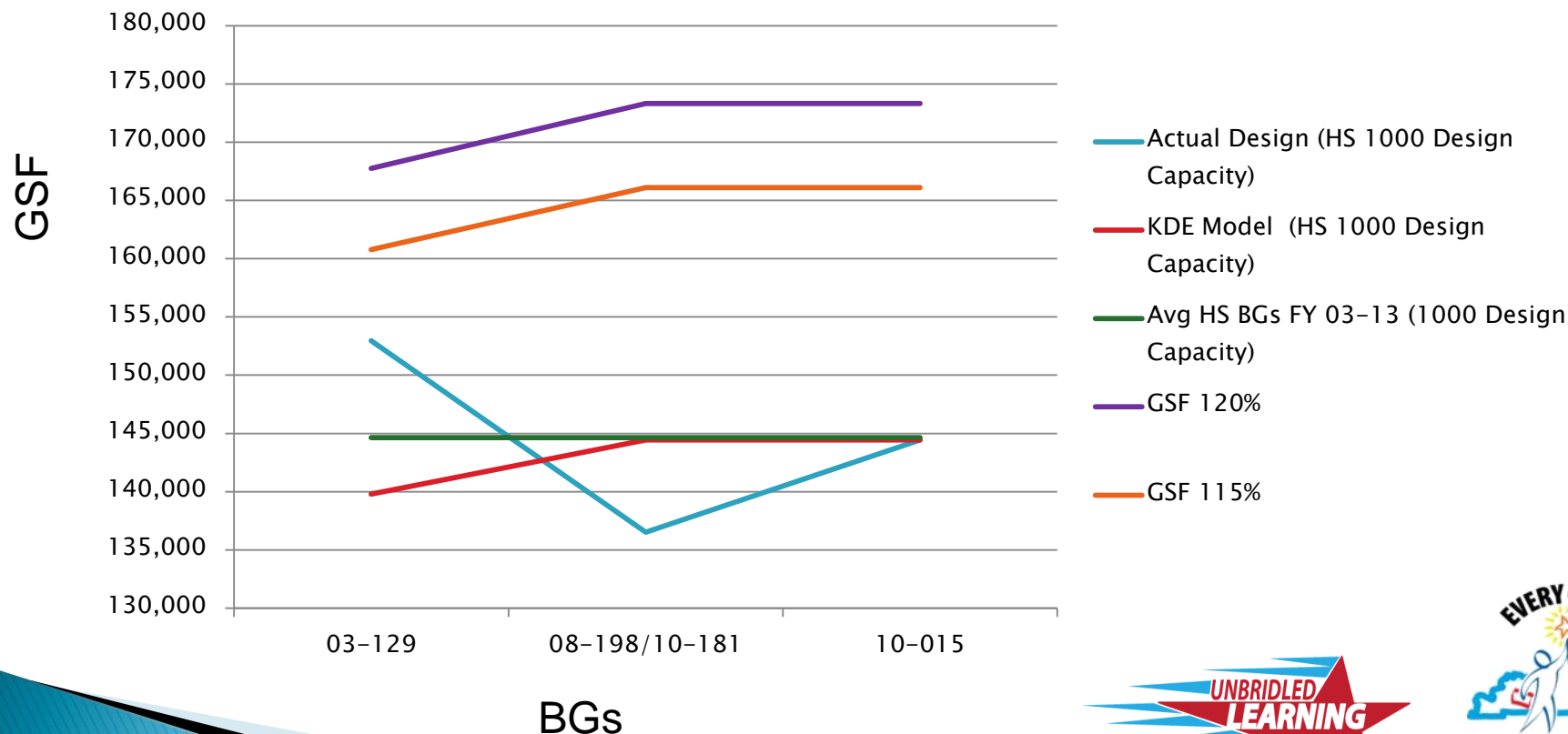


Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF

New School Buildings 2003 – 2013

HIGH SCHOOL 1000 Design Capacity



Efficient School Design (KRS 157.450 & 157.455)

Actual Design Program Area GSF vs KDE Model Program Area GSF

New School Buildings 2003 – 2013

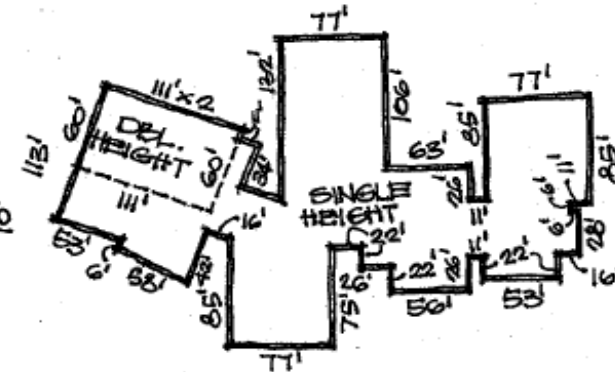
HIGH SCHOOL 1000 Design Capacity

BG	Actual Design (HS 1000 Design Capacity)	KDE Model (HS 1000 Design Capacity)	Avg HS BGs FY 03–13 (1000 Design Capacity)	GSF 120%	GSF 115%
03-129	152,947	139,801	144,640	167,761	160,771
08-198/10-181	136,527	144,434	144,640	173,321	166,099
10-015	144,447	144,434	144,640	173,321	166,099

BG 08-198 / 10-181 NELSON CO. – New HS Phases 1 and 2



Green Building



TRADITIONAL SINGLE STORY PLAN

750,000 SF. ONE (1) FLOOR

- 50,000 SF. ROOF
- 1,638 LF. (12' WALL)
- 19,656 SF EXT. WALL
- * • 3931 SF EXT WALL
PER SF FLOOR
- 69,656 SF EXT. ENV.
- * • 1.39 SF EXT. ENV
PER SF FLOOR

30,000 SP. ONE (1) FLOOR.

- 50,000 SF. ROOF
- 2,044 LF. (12' EXT. WALL)
- 24,528 SF EXT. WALL
- * • 4906 SF EXT. WALL
PER SF. FLOOR
- 74,528 SF EXT. ENV.
- * • 1.49 SF EXT. ENV.
PER SF. FLOOR



2014 KY Green Ribbon Schools



2014 KY Green Ribbon Schools

- ▶ This award is a comprehensive recognition of exemplary achievement in environmental impact, health, and education.
- ▶ It recognizes schools where staff, students, officials, and communities have worked together to produce energy efficient, sustainable, and healthy school environments and to ensure the sustainability and environmental literacy of graduates.



2014 KY Green Ribbon Schools

High achievements or demonstrated improvements in three pillars:



Reduce environmental impact and costs



Improve the health and wellness of students and staff



Provide effective environment and sustainability education, incorporating STEM, civic skills and green career pathways



2014 KY Green Ribbon School

Congratulations!

An outstanding Kentucky school is the recipient of the 2014 Kentucky Green Ribbon Schools Award:

- ▶ **Fayette County – Wellington Elementary**

This school was nominated for the 2014 National Green Ribbon Schools Award. National Honorees will be announced on April 22, 2014 by the US Department of Education.



2014 KY Green Ribbon School

Looking forward 2015 Green Ribbon Schools

- ▶ Visit [KDE Facilities Green Ribbon Schools](#) webpage for more information.
 - Look for the 2015 KY Green Ribbon School Application in the Fall of 2014.
 - Participation in Kentucky's Green Ribbon Schools Program is a **THREE** step process.
 1. Submit “Letter of Intent”.
 2. Complete the KY Green Ribbon School Application.
 3. Work with KDE to complete a nomination package.



School Safety and Security



School Safety and Security

SB 8 / HB 354

Changes to School Safety Requirements for Schools

- ▶ The passage of Senate Bill 8/HB 354 (<http://www.lrc.ky.gov/record/13RS/SB8.htm>), which changes several of Kentucky's current school safety statutes, took effect on **June 25, 2013**. This bill expands current law by requiring schools and districts to include community first responders in their emergency plans, and presents an opportunity for review and refinement of current emergency and safety practices through continuous improvement.

Source: <http://www.kycss.org>



School Safety and Security

SB 8 / HB 354

Changes to School Safety Requirements for Schools

Resource

Kentucky Center For School Safety

<http://www.kycss.org>

- [Summary of SB8/HB354 for District and School Use](#)
- [School Safety Legislative Update](#)
- [The Kentucky Crime Prevention Through Environmental Design Checklist](#)
for school construction is to be used in compliance with KRS 158.447. This is now a part of the BG-1 process. It is designed to create open discussion among school district officials, board member and licensed design professionals architects/engineers when planning for new school construction or renovation projects start.



School Safety and Security

Holistic View



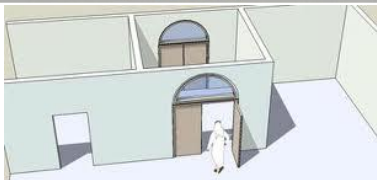
- ▶ Fire Safety / Life Safety – Changes in Fire Safety Codes
- ▶ Natural Disasters – Changes in Building Codes ongoing
- ▶ Internal Violence and/or Medical Emergency – Changes in protocols and administrative operations but no building code or regulation changes
- ▶ External Violent Intrusion – Changes in protocols and administrative operations. Likely legislative action to address regulation and code changes



School Safety and Security

Funding Options

- ▶ Undertaken through the standard BG-1 Process
 - Submission to KDE
 - Architect review or design
- ▶ 2008 changes in 702 KAR 4:180 allow “safety and security systems” to be included on the District Facilities Plan (DFP) as a single system in funding priority
- ▶ If not on DFP, costs are generally modest and could be paid from “restricted cash” by submission of a Capital Funds Request Form



Legislation Updates

- Pending Legislation
- Enacted Legislation



Legislation Updates – Pending Legislation

THE FOLLOWING IS A LISTING OF SEVERAL 2014 LEGISLATIVE BILLS PERTAINING TO EDUCATIONAL ISSUES

(In parentheses is status of bill on March 10, 2014)

HOUSE BILLS

- ▶ HB 520
- ▶ HB 532
- ▶ HB 565
- ▶ HB 489



Legislation Updates – Pending Legislation

HB 520 (BR 1665) - **F. Steele** AN ACT relating to energy efficiency.

Amend KRS 57.770 to delete definitions for Green Globes Rating System and LEED; amend KRS 56.777 to increase membership on the High-Performance Buildings Advisory Committee from 15 to 16 by appointing a member of the Kentucky Association of Manufacturers; delete reference to use of Energy Star, Green Globes and LEED in building performance standards and require standards and benchmarks to be developed to achieve 10 percent above the standard set by the American Society of Heating, Refrigerating and Air Conditioning Engineers; require standards or codes for construction projects for energy performance to recognize certain forest industry programs; amend KRS 56.782 to replace LEED and Green Globe with building rating systems or codes; **amend KRS 157.455 to delete reference to LEED design and update the standard for the American Society of Heating, Refrigerating, and Air Conditioning Engineers energy standard.**

Mar 4–introduced in House

Mar 5–to Tourism Development & Energy (H)



Legislation Updates – Pending Legislation

HB 520 (BR 1665) - F. Steele

Section 4 (c). KRS 157.455 is amended to read as follows:

UNOFFICIAL COPY AS OF 03/11/14

14 REG. SESS. 14 RS BR 1665

"Efficient school design" means a school building design:

1. ~~[That meets, at a minimum, the requirements of the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) for schools at the "Certified" level or certification under a comparable system with equivalent requirements or other building performance certification systems, such as the United States Department of Energy's Energy Star program;~~
2. ~~]~~ That ensures energy savings from a building design that equates to or exceeds ten percent (10%) over the American Society of Heating, Refrigerating, and Air Conditioning Engineers energy standard 90.1-2010~~[90.1-2007]~~; and
- 2.~~[3.]~~ For which whole building life-cycle cost analysis illustrates that the design is cost-effective.



Legislation Updates – Pending Legislation

HB 532 (BR 1857) – K. Hall, H. Collins, S. Rudy AN ACT relating to school facilities and making an appropriation therefor.

Create a new section of KRS Chapter 157 to create the emergency and targeted investment fund to be administered by the School Facilities Construction Commission; allot appropriations unexpended by the commission to the fund, unless the fund balance is \$10,000,000; direct the commission to use the fund to provide assistance to school districts for new facilities or renovations in emergency situations or when facilities are uninhabitable; provide that school districts shall reimburse the fund for any assistance if funds are subsequently received as a result of insurance proceeds or litigation; require the commission to promulgate administrative regulations regarding the application process; require an annual report on the fund's activities to the Legislative Research Commission; amend KRS 157.611 to conform; APPROPRIATION.

Mar 4–introduced in House

Mar 5–to Education (H)



Legislation Updates – Pending Legislation

HB 565 (BR 1958) – J. Carney, S. Rudy AN ACT relating to school facilities funding, making an appropriation therefor, and declaring an emergency.

Amend KRS 157.611 to specify that the School Facilities Construction Commission will administer the school facilities emergency relief fund; amend KRS 157.615 to define emergency; create a new section of Chapter 157 to establish the school facilities emergency relief fund to be administered by the School Facilities Construction Commission, operating and reporting requirements; amend KRS 157.390 and 162.385 to conform; APPROPRIATION; EMERGENCY.

Mar 4–introduced in House

Mar 5–to Education (H)



Legislation Updates – Pending Legislation

HB 489 (BR 316) – S. Riggs AN ACT relating to energy.

Amend KRS 45A.345 to expand definition of "qualified provider" and add definitions of other terms; amend KRS 45A.352 to limit bidders for guaranteed energy savings performance contracts to qualified providers; add total outstanding obligations under other such contracts to evaluation criteria; add a measurement and verification protocol to those acceptable; set penalties for failure to provide annual reconciliation statement; local agency may waive measurement and verification for lighting projects after two years; amend KRS 45A.353 to direct that exempted debt service obligations shall be added back into agency debt limits in the event of a guarantee termination; new section of KRS 45A created to set requirements for qualified provider status, renewal requirements and regulatory authority; amend KRS 103.200, 210, 220, 240, and 286, pertaining to city and county private activity revenue bonds, and create a new section of KRS Chapter 103 to reserve 10% of the state private activity bond cap for small or medium manufacturing facility energy efficiency bond projects during the first half of the bond cap allocation period after which unused cap shall revert to the single allocation pool; set requirements for issuance of manufacturing energy efficiency bonds; create new section of KRS 147A to allow DLG to establish an information clearinghouse to educate on issuance and uses of industrial revenue bonds; amend KRS 154.34-010, 070, 080, and 110 of the Kentucky Reinvestment Act to create a separate tax incentive tier for industries that invest a minimum of \$300,000, applicable only to energy efficiency investments for small and medium sized industries previously ineligible.

Feb 27–introduced in House

Mar 4–to Tourism Development & Energy (H)



Legislation Updates – Enacted Legislation

THE FOLLOWING IS A LISTING OF ENACTED LEGISLATION PERTAINING TO EDUCATIONAL ISSUES

- ▶ **KRS 158.447 – Required review of CPTED principles prior to school construction or renovation.**
 - Effective: June 25, 2013

- ▶ **702 KAR 4:160. Capital Construction Process**
 - Effective: September 6, 2013



Legislation Updates – Enacted Legislation

- ▶ **KRS 158.447 – Required review of CPTED principles prior to school construction or renovation.**

The Kentucky Department of Education shall require a local board of education to review Crime Prevention Through Environment Design principles, or CPTED principles, when constructing a new school building or when renovating an existing school building.

Effective: June 25, 2013



Legislation Updates – Enacted Legislation

702 KAR 4:160. Capital Construction Process

Effective: September 6, 2013

Regulation Revision

- ▶ In 2010 what started as a minor change to 702 KAR 4:160 Capital Construction Process to incorporate the 2009 AIA Construction Manager Documents into regulation became a three year review process resulting in a major restructuring of the regulation.
- ▶ During this time the Commissioner of Education empaneled a committee consisting of school officials (superintendents and facilities managers) and architects to review the current regulation. In addition, KDE invited other stakeholders including AIA Kentucky, contractors, construction managers, engineers, performance contractors, and others concerned with school construction in the Commonwealth.
- ▶ From these meetings, changes were directed to be made to the regulation that have now been incorporated, the revised regulation became effective September 6, 2013.



Legislation Updates – Enacted Legislation

KAR 702 KAR 4:160. Capital Construction Process

Effective: September 6, 2013

New American Institute of Architects (AIA) Documents – KDE Versions

- ▶ New documents have been developed with the American Institute of Architects to be specific to school construction in Kentucky.
- ▶ The documents incorporate what had previously been amendments to the AIA documents into the body of the forms.
- ▶ These forms have been developed and are currently being vetted by AIA and will shortly be distributed through AIA's Documents on Demand website.
- ▶ Because the regulation will be in effect before the AIA documents are complete, current documents are to be used for a little while longer, but we will be phasing in the use of the new AIA documents as they become available. (Expect new KDE Versions to become available in the beginning of FY 15)



Legislation Updates – Enacted Legislation

KAR 702 KAR 4:160. Capital Construction Process

Effective: September 6, 2013

- ▶ **Overview of Revisions to 702 KAR 4:160, Capital Construction Process**
- ▶ **General Note:** The “new” regulation in regards to submissions requiring board approval.
 - Board orders are not required to be submitted, except for submission of a BG-1 Project Application declaring an emergency project. However, the local district should develop a dedicated file for each project and include a copy of the board order in that file and the department may request a copy of the board order at any time as needed for approvals and all submissions requiring board approval will have been approved by the board prior to submission to KDE.



Legislation Updates – Enacted Legislation

KAR 702 KAR 4:160. Capital Construction Process

Effective: September 6, 2013

- ▶ Overview of Revisions to 702 KAR 4:160, Capital Construction Process
- ▶ Best Practices Manual
- ▶ Available on KDE Facilities Construction webpage
<http://education.ky.gov/districts/fac/Pages/Construction.aspx>
- ▶ To be developed as procedures document for K-12 school construction projects
- ▶ Includes Construction Manager – As Advisor – As Constructor
- ▶ Allows KDE to update specific procedures, when needed



Legislation Updates – Enacted Legislation

KAR 702 KAR 4:160. Capital Construction Process

Effective: September 6, 2013

- ▶ Overview of Revisions to 702 KAR 4:160, Capital Construction Process
- ▶ Visit KDE Facilities Construction webpage for more information

<http://education.ky.gov/districts/fac/Pages/Construction.aspx>



Questions

